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| **Explanation of Math Instructional Sequence**  *The following two pages will explain the set up of the Instructional Sequence.* | | |
| Unit #: **Title of Unit** Time Frame: Dates for instructing (days allotted) | | |
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| **Essential Understandings: C:\Users\lsharlow\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\N41QMS9C\MC900233518[1].wmf**   * This section notes the “big math ideas” this unit focuses on. | | |
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| **CCSS focus this unit:**   * The coding and wording for the specific standards directly linked to the Essential Understandings of this unit will be listed here.   Also addressed:   * The coding and wording for other standards connected to the content of this unit, though not a direct connection to the Essential Understanding will be listed here. |  | **Math Practices**  This section reminds us of the instructional expectations of our lessons by listing the 8 Standards for Mathematical Practice noted in our Common Core State Standards. |
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|  | Planning/Reflective Questions for Teachers   * The CCSS expects our instruction to change. * The questions listed here are to assist our thinking in regards to planning and instructional practice. |
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| **Key:**  **EM –** Everyday Mathematics Teacher’s Lesson Guide  **TRM—**Teacher’s Reference Manual  **AH—**Assessment Handbook (Everyday Mathematics)  **EM — DO** Everyday Math Part 3: Differentiation Options  **GK**—Everyday Math Games Kit (see “Teacher’s Guide to Games” book)  **VDW** – Teaching Student-Centered Mathematics by Dr. Van de Walle  **AIMS**-(name of book)—specific book will be identified with lesson name and page number(s)  **\*AFS –** Addition/Subtraction Fact Strategies  **\*MFS** – Multiplication Fact Strategies  \*(referenced in Support Resources & offered at the print shop) |  | **Critical Vocabulary:**  Specific terms that should be used with precision while communicating about the topic of this unit will be listed here.  REMEMBER: WPS portal houses the concept cards for student interaction and display, strategies and definitions packet, and interactive SMART Board activities designed to support vocabulary understanding. |
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| Lessons not aligned to CCSS: lessons that are not included or listed as “optional” will be listed here. Optional lessons are included in the list of lessons and are considered lessons that enhance students’ learning, though not directly addressing grade level standards. | | |

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| **Second page** | | |
| **CCSS** | **Lesson** | **Questions to encourage MP** |
| For the objective of each lesson, the following will be noted:  Content Standard(s)  Standards for Mathematical Practice  ▲Assessed indicators (3rd-5th) | * **Unit Lesson #– Lesson Title** p. pages in Teacher’s Guide   A star (★) will be in front of lessons that have changes that support the new CCSS. Teachers will need to access the new resources from either the WPS portal, or everydaymathonline.com.  All other lessons will have a circled bullet (⬝)  *Teacher Note: instructional adjustments that are necessary to target skills and concepts.* | * Questions listed for each lesson that focus on one or more Mathematical Practice Standards * These questions could be beneficial for formative assessment or reflective closing opportunities. |
|  | * Additional Lessons/Half-Lessons will be inserted within units to address content that requires instructional support. |  |
|  | * **Progress Check - Unit lesson #**   p. in Teacher’s Lesson Guide  *(When lessons have been deleted from a unit, items from the Written Assessment Part A that should be skipped will be noted here )* |  |

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| Support Resources **second or third page** |
| Coded standard (i.e. 5.OA.2)  Resources that support the focus standards of this unit will be listed here. Each standard will have its own list of support activities. These can be used to enhance core instruction or intervention needs.  Resources could include: Everyday Math Games (GK), “Teaching Student Centered Mathematics” (VDW); or the AIMS-Solve it book (AIMS PS)  *Remember, Everyday Mathematics part 3: Differentiation Options offer instructional support for intervention. These are not listed within these boxes, but are valuable activities to consider.* |

Unit 1: **Routines, Review, and Assessment** Time Frame: Aug 15-Sep 11 (19 days)

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| Essential Understanding:   * Use place value understanding and properties of operations to perform multi-digit arithmetic. | | |
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| **CCSS focus this unit:**   * 3.NBT.2-- Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.   Also addressed:   * 3.MD.1-- Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. * 3.MD.3-- Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.* |  | **Math Practices**   1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. |
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|  | Planning/Reflective Questions for Teachers   * How can I use the structure of the place value system to assist students in their efficiency and accuracy in multi-digit computation? * What strategies for computation emphasize place value knowledge and skill? |
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Lessons not aligned to CCSS: 1-3, 1-7, 1-10

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| 3.NF.2  MP1, 2, 4, 6, 7  ▲3.1.1.K2a | * **Lesson 1-1 Numbers and Number Sequences**  p. 18-22   *Teacher Note: Enrichment activity addresses 3.NF.2* | * Why is it important to count accurately? * How do you know your count is accurate? |
| MP1, 3, 5, 6, 7 | * **Lesson 1-2 Number Grids** p. 23-27 | * Where can you find patterns in mathematics? |
| Optional | * **Lesson 1-3 Introducing the *Student Reference* *Book*** p.28-31 | * Why is it important to be accurate when you add, subtract, multiply or divide? |
| 3.MD.1  MP2, 5, 6,  ▲3.3.1.K4  ▲3.3.2.K2  ▲3.3.2.A1b | * **Lesson 1-4 Tools for Mathematics** p. 32-36 | * Why is it important to use mathematical tools correctly? |
| 3.MD.3  MP1, 2, 3,4,7 | * **Lesson 1-5 - Analyzing and Displaying Data** p. 37-41   *Teacher Note: scale of bar graph should be emphasized* | * What does each square in the bar graph mean? * Why is it important to be able to explain data shown in tally charts and graphs? |
| MP1, 2, 5, 6 | * **Lesson 1-6 Equivalent Names (2 days)** p. 42-46 | * When might it be helpful to solve a problem in more than one way? Explain your thinking. |
| 3.NBT.2  MP2,3,5,6,7 | * **Lesson 1-8 Finding Differences** p. 51-54   *Teacher Note: consider modeling on a number line* | * When solving any problem, how do you know if your answer is correct? |
| 3.NBT.2  MP 1-7 | * **Lesson 1-9 Calculator Routines** p. 55-60   *Teacher Note: recommend solving mentally first, then check with calculator* | * Why is it important to use a calculator, or any other tool, correctly? |
| 3.OA.9  MP1,4,8 | * **Additional lesson – Adding/Subtracting with Even/Odd Numbers** | * What pattern happens when adding even/odd numbers? |
| Optional | * **Lesson 1-10 Money** p. 61-66 | * Why is it important for you to be able to explain what numbers and symbols mean? |
| MP1,2,3,4,5,6  ▲3.1.1.K4N | * **Lesson 1-11 Solving Problems with Dollars and Cents (2 days)** p. 67-72 | * How do you decide whether the answer to a problem should be exact or an estimate? |
| ▲3.3.2.A1e | * **Lesson 1-11½ Days of the Week** |  |
| ▲3.1.1.K2a | * **Lesson 1-12 Patterns**  p. 73-77 | * Why are patterns important in mathematics? |
| 3.MD.1,  MP 1-6 | * **Lesson 1-13 The Length-of-Day Project** p. 78-83   *Teacher Note: sunrise/sunset activity optional* | * Explain your solution to the problem. Show what you did to solve it. |
|  | * **Progress Check 1 - Lesson 1-14** p. 84-87   *Teacher Note: skip #1-3, 11* |  |

Support Resources

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| 3.NBT.2:  **GK -** “Shopping”,  **GK** “Beat the Calculator (+)”,“Shaker Addition Top-It”, “3,2,1”, “Addition Top-it”  **VDW -** “Invented Strategies for Addition and Subtraction” Volume 2, p. 108 | **Tier 2:** Besides setting procedures and expectations, we suggest that you give the Addition Fact Strategies tests to determine the needs of your students. If you have students that struggle with knowing these facts, it would be wise to address them in your intervention time. Activities from your “Addition and Subtraction Fact Strategies” booklet will offer several activities for teaching and practicing each specific strategy. |

Unit 2: **Adding and Subtracting Whole Numbers** Time Frame: Sept. 12- Oct. 17 (23 days)

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| Essential Understanding:   * Use place value understanding and properties of operations to perform multi-digit arithmetic. * Solve problems involving the four operations, and identify and explain patterns in arithmetic. | | |
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| **CCSS focus this unit:**   * 3.NBT.1-- Use place value understanding to round whole numbers to the nearest 10 or 100. * 3.NBT.2-- Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. * 3.OA.8-- Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. * 3.OA.9-- Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*   Also addressed:   * 3.MD.1-- Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. |  | **Math Practices**   1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. |
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|  | Planning/Reflective Questions for Teachers   * How can I emphasize the strategies of place value when working with the extension facts? * When using the Thinking Tools (Start-Change-Result diagram, Part-Part-Whole diagram, etc.), what needs to be done so students think about the process and use the tools with understanding? |
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Lessons not aligned to CCSS: 2-3

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| 3.OA.9  3.NBT.2 | * **Lesson 2-1 Fact Families** p. 100-105 | * Why is it important to be able to explain what you did to solve a math problem and why it works? * How would you explain the relationship between addition and subtraction? |
| 3.OA.9  3.NBT.2 | * **Lesson 2-2 Extensions of Addition and Subtraction Facts** p. 106-111 | * When is the relationship between ones, tens, and hundreds important in mathematics? * How does knowing about the relationship between ones, tens, and hundreds help you solve problems with larger numbers? |
| Optional | * **Lesson 2-3 “What’s My Rule?”** p. 112-116 | * Why are rules important in mathematics? |
| 3.NBT.2 | * **Lesson 2-4 Parts-and-Total Number Stories** (2 days) p. 117-122 | * Why is it important to make a plan when solving math problems? |
| 3.NBT.2 | * **Lesson 2-5 Change Number Stories** p. 123-128 | * How can diagrams and number models help you solve math problems? * How do you know what symbols to write in your number model? |
| 3.NBT.2 | * **Lesson 2-6 Comparison Number Stories** (2 days) p. 129-134 | * Why is collecting, comparing, and recording data important? |
| 3.NBT.2 | * **Additional Lesson: Thinking Tools**   *Teacher Note: the computation thinking tools should be used consistently throughout the year. Use the basic lessons (or word problems from other resources) to practice* | * How can diagrams and number models help you solve math problems? |
| 3.NBT.1  3.NBT.2 | * **Lesson 2-7 The Partial-Sums Algorithm** (2 days)p. 135-14 | * Why is it important to check whether your answer makes sense? * How do you know whether your answer is correct? |
| 3.OA.8  3.NBT.2,  MP2,4,5,6,7 | * **Algorithm Project (addition) 1** p. A1-A4 | * Why is understanding place value important for using the traditional algorithm? |
| 3.NBT.1  3.NBT.2 | * **Lesson 2-8 Subtraction Algorithms (2 days)** p. 141-145   *Teacher Note: Counting Up Strategy needs to add number line. Trades-First Strategy (optional) If used, must have strong emphasis on place value understanding* | * When might you need to know what time it will be in 30 minutes? * Why is telling time important? |
| 3.OA.8  3.NBT.2,  MP2,4,5,6,7 | * **Algorithm Project 2 (subtraction)** p. A5-A9 | * Why is understanding place value important for using the traditional algorithm? |
| 3.OA.8  3.NBT.2 | * **Lesson 2-9 Addition with Three or More Addends** p. 147-151 | * Why is it important to make sense of problems in mathematics? * What questions can you ask yourself to help make sense of a number story? |
| 3.MD.1 | * **Open Response as a Lesson** AH p. 156   *Teacher Note: Open Response needs guided instruction for development of Math Practices. Select practice activity (i.e., games) that students need for review or fluency practice.* |  |
| 3.OA.3,  3.OA.5,  3.NBT.2,  MP2,4,5,6, | * **Progress Check 2 – Lesson 2-10** p. 152-155   *Teacher Note: Skip # 3, 4* |  |

Support Resources

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| 3.OA.8  **VDW -** “Drawings and Diagrams for Story Problems” Volume 2, p. 304  **CCSS** – table 1 p. 88 | 3.NBT.2  **GK** “Hit the Target”  **VDW –** “The Role of Number and Operations Concepts” Volume 2, p. 75  **CCSS** – table 1 p. 88 |
| 3**.**NBT.1 | 3.OA.9  **VDW -** “Function Machines” Volume 2, p. 316 |

Unit 3: **Linear Measures and Area** Time Frame: Oct.18 – Nov 2 (12 days)

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| Essential Understanding:   * Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures * Geometric measurement: understand concepts of area and relate area to multiplication and to addition | | |
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| **CCSS focus this unit:**   * 3.MD.5--**.**Recognize area as an attribute of plane figures and understand concepts of area measurement.   a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.  b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.   * 3.MD.6-- -- Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). * 3.MD.7-- -- Relate area to the operations of multiplication and addition.   a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.  b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.  c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths *a* and *b* + *c* is the sum of *a* × *b* and *a* × *c*. Use area models to represent the distributive property in mathematical reasoning.  d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.   * 3.MD.8--**.**Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.   Also addressed:   * 3.NF.2-- -- Understand a fraction as a number on the number line; represent fractions on a number line diagram. a & b |  | Math Practices   1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. |
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|  | Planning/Reflective Questions for Teachers   * How can I build understanding with my students that measurement is about the spaces on the ruler and not the marks? * When students area explaining their thinking, how can I make sure they understand the relationship between area and multiplication? |
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Lessons not aligned to CCSS: 3-1, 3-5, 3-9

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| Optional | * **Lesson 3-1 A “Glass Shoe” Unit of Length** p. 170-175 | * What math vocabulary helps you communicate clearly about the chances of something happening or not happening? |
| 3.NF.2a,b, 3.NF.3a,  3.MD.4  MP4, 5, 6  ▲3.3.2.A1a,b | * **Lesson 3-2 Measuring with a Ruler** p.176-181   *Teacher Note: adjust lesson to include a line plot as the data display, since it is the data display focus for 3rd grade* | * What is more *precise:* measuring to the nearest inch or 1/2 inch? How do you know? |
| 3.MD.2  ▲3.3.2.A1a, b | * **Lesson 3-2½ Real-World Linear Measurement** | * What does it mean to measure to the nearest inch? |
| 3.MD.4  MP2, 4, 5, 6  ▲3.3.2.A1a,b | * **Lesson 3-3 Standard Linear Measures** (2 days) p. 182-187   *Teacher Note: adjust lesson to include a line plot as the data display, since it is the data display focus for 3rd grade* | * Compare your personal measurement references with those of a partner. How are your personal measurement references alike and different from your partner’s? |
| 3.MD.8  3.G.1  MP1, 2, 4, 5, 6  ▲3.3.1.K2  ▲3.3.2.A1a,b | * **Lesson 3-4 Perimeter** p. 188-193   *Teacher Note: Enrichment activity is highly encouraged* | * How did you know the number of straws you needed to create a triangle? A square? A rhombus? |
| 3.MD.5a,b  3.MD.6,  3.MD.8  MP 1-6  ▲3.3.1.K4  ▲3.3.2.A1a | * **Lesson 3-6 Exploration: Exploring Perimeter and Area** p. 200-201   *Teacher Note: exclude exploration C* | * What other things might help you to explain what perimeter means? |
| 3.MD.5a,b  3.MD.6,  3.MD.7a  MP 1-6 | * **Lesson 3-7 Area** p. 206-211 | * Why might it be helpful to estimate length before you measure something? |
| 3.MD.5a,b, 3.MD.6, 3.MD.7a,b 3.MD.8  MP1, 4, 7, 8  ▲3.1.1.K3b | * **Lesson 3-8 Number Models for Area** p. 212-217   *Teacher Note: extra practice activity needed to address 3.MD.8; this is a good time to include the part-part-whole thinking tool with students* | * What tools could you use to solve the problem? |
|  | * **Lesson 3-10 Progress Check 3** p. 224-227   *Teacher Note: skip #8 & 9* |  |

Support Resources

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| 3.MD.4 | 3.MD.5  **VDW**: v2 p. 281-284  **VDW**: v2 p. 261-265 |
| 3.MD.6  **AIMS (**Solve It!) “Pumpkin Patches p. 82-90  **MW**: “Color tile Challenge” p 8  **VDW**: v2 p. 281-284  **VDW**: v2 p. 261-265 | 3.MD.7  **MW**: “Rectangle Riddle” p 10 |
| 3.MD.8  **MW**: “Make a Polygon” p 6 |  |

Unit 4: **Multiplication and Division** Time Frame: November 5 - 30 (16 days)

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| Essential Understanding:   * Represent and solve problems involving multiplication and division. * Understand properties of multiplication and the relationship between multiplication and division. * Multiply and divide within 100 | | |
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| **CCSS focus this unit:**   * 3.OA.1-- Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.* * 3.OA.2-- Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. * 3.OA.3-- Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. * 3.OA.4 - Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 =*  *÷ 3, 6 × 6 = ?.* * 3.OA.5 - Apply properties of operations as strategies to multiply and divide. *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)* * 3.OA.6 - Understand division as an unknown-factor problem. *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.* * 3.OA.7 - Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. * 3.OA.9 - Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*   Also addressed:   * 3.MD.6-- Measure areas by counting unit squares. * 3.MD.7-- Relate area to the operations of multiplication and addition. a-d |  | **Math Practices**   1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. |
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|  | Planning/Reflective Questions for Teachers   * How can I make sure my students understand the inverse relationship between multiplication and division? * When using the properties of operations, can students explain why they work? |
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Lessons not aligned to CCSS: 4-9, 4-10

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| 3.OA.1, 3.OA.3,  3.OA.4, 3.OA.5,  3.OA.7  MP 1-7  ▲3.1.1.K3b | * **Lesson 4-1 Multiples of Equal Groups** p. 242-247   *Teacher Note: it would be beneficial to use the “Thinking Tools with this unit’s lessons* | * How did the tools that you used help you solve the multiplication number stories? |
| 3.OA.1, 3.OA.3,  3.OA.4, 3.OA.5,  3.OA.7  MP 2,4,5,6,7  ▲3.1.1.K3b | * **Lesson 4-2 Multiplication Arrays** p. 248-253 | * If you don’t know the answer to a multiplication fact, how can an array help you find the product? |
| 3.OA.1, 3.OA.3,  3.OA.4, 3.OA.5,  3.OA.7  MP 2,5,6,7 | * **Lesson 4-3 Equal Shares and Equal Groups** p. 254-259 | * What are some ways that you can show how you solve equal grouping and equal sharing problems? |
| 3.OA.9  MP1,4,8 | * **Additional lesson – Multiplying with Even/Odd Numbers** | * What pattern happens when multiplying with even/odd numbers? |
| 3.OA.2, 3.OA.3,  3.OA.4, 3.OA.6,  3.OA.7  MP2, 4, 5, 7 | * **Lesson 4-4 Division Ties to Multiplication** p. 260-265 | * What does it mean to divide something? Use words, pictures, arrays, or other tools to show your thinking. |
| 3.OA.5, 3.OA.7,  3.OA.9  MP2,4,5,6,7  ▲3.1.1.K3b | * **Lesson 4-5 Multiplication Fact Power and Shortcuts** p. 266-271 | * How might patterns help you solve multiplication problems? |
| 3.OA.2, 3.OA.4,  3.OA.5, 3.OA.6,  3.OA.7, 3.OA.9  MP2, 3, 5, 6, 7  ▲3.1.4.K7 | * **Lesson 4-6 Multiplication and Division Fact Families** p. 272-277 | * How might patterns in the facts table help you know multiplication and division facts? Give some examples. |
| 3.OA.5, 3.OA.7  MP4, 5, 6, | * **Lesson 4-7 *Baseball Multiplication*** p. 278-282 | * What pitches of 5 or less use the multiplication by 1 shortcut? |
| 3.OA.1, .OA.7,  3.OA.9, 3.OA.4, 3.OA.6, 3.MD.6,  3.MD.7a, b  MP1, 2, 5, 6 | * **Lesson 4-8 Exploration: Exploring Arrays and Facts** p. 283-287 | * What tools might help you write a division fact for a multiplication fact? * What do problem solvers do before solving a problem? |
| Optional | * **Lesson 4-9 Estimating Distances with a Map Scale** p. 288-293 | * What happens to the numbers as you move to the right on a number line? |
|  | * **Lesson 4-11 Progress Check 4 p**. 300-303   *Teacher Note: skip #6* |  |

Support Resources

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| 3.OA.1  **GK** “Multiplication Bingo”  **GK** “Baseball Multiplication Draw” | 3.OA.2  **GK** “Fact Triangle Flip”  **GK** “Division Arrays” |
| 3.OA.3  **AIMS** (Solve It!) “Schmoos’ Goos p. 60-65  **CCSS** – Table 2 p. 89 | 3.OA.4  **CCSS** – Table 2 p. 89  **GK** Missing Terms” |
| 3.OA.6  **CCSS** – Table 2 p. 89  **GK** Missing Terms” | 3.OA.7  **GK** “Beat the Calculator (x)”  **GK** “Baseball Multiplication  **GK** “Multiplication Bingo”, |
| 3.OA.9 |  |

Unit 5: **Place Value in Whole Number and Decimals** Time Frame: December 3 - 20 (14 days)

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| Essential Understanding:   * Use place value understanding and properties of operations to perform multi-digit arithmetic. * Develop understanding of fractions as numbers. | | |
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| **CCSS focus this unit:**   * 3.NBT.1-- Use place value understanding to round whole numbers to the nearest 10 or 100. * 3.NF.1-- Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*.   Also addressed:   * 3.NBT.2-- Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. * 3.MD.2-- Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. * 3.MD.8— Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. * 3.G.1--**.** Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. |  | **Math Practices**   1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. |
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|  | Planning/Reflective Questions for Teachers   * How can I use the structure of the place value system to assist students in their efficiency and accuracy in multi-digit computation? * What strategies for computation emphasize place value knowledge and skill? |
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| **Key:**  **EM –** Everyday Mathematics Teacher’s Lesson Guide  **TRM—**Teacher’s Reference Manual  **AH—**Assessment Handbook (Everyday Mathematics)  **EM — DO** Everyday Math Part 3: Differentiation Options  **GK**—Everyday Math Games Kit (see “Teacher’s Guide to Games” book)  **VDW** – Teaching Student-Centered Mathematics by Dr. Van de Walle  **AIMS**-(name of book)—specific book will be identified with lesson name and page number(s)  **\*AFS –** Addition/Subtraction Fact Strategies  **\*MFS** – Multiplication Fact Strategies  **Blue – Science/Health Connection**  **Red—Language Arts/Social Studies Connection** |  | **Critical Vocabulary:**  digit, place value, maximum, median, pattern, whole number, equivalent, area, line segment, perimeter, polygon, square, rectangle, triangle, decimal, fraction |

Lessons not aligned to CCSS: 5-8, 5-10, 5-11, 5-12

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| 3.NBT.1  MP5,6,7  **▲3.1.1.K2a** | * **Lesson 5-1 Place Value Through Ten-Thousands** p. 318-322 | * Why is it important to know the value of each digit? * How might the place-value chart help you answer this question: *What would happen if the zero were left out of 5,072?* |
| 3.NBT.1  MP2, 4, 5, 7,  ▲3.1.1K2a | * **Lesson 5-2 Reading, Writing, and Ordering Numbers** p. 323-329 | * Why do we compare numbers? * What does > mean? * Give an example of a time when you would use the > symbol. |
| ▲3.1.1.K2a | * **Lesson 5-3 Place Value to Millions**   p. 330-335 | * What do the commas mean in numbers in the millions? * What words help you know how large a number is when you hear it read out loud? |
| MP2, 4, 6, 7  ▲3.1.1.K1a | * **Lesson 5-4 Application: The U.S. Census**   p. 336-341 | * When might you read and write large numbers in real life? |
| 3.MD.1  MP1, 2, 5, 6, 7  ▲3.1.1.K1a  ▲3.3.2.A1e | * **Lesson 5-5 Very Large Numbers**   p. 342-346 | * What do you need to know to calculate your age in days? In hours? In minutes? |
| 3.MD.8  3.G.1  3.NBT.2  MP1-7 | * **Lesson 5-6 Exploration: Exploring Estimates and Polygons**  p. 347-351 | * How can estimates help you check exact answers? * Look at journal page 111. What makes a square a square, a rectangle a rectangle, and a triangle a triangle? |
| 3.NF.1  MP1, 2, 5, 7 | * **Lesson 5-7 Model Decimals with Base-10 Blocks**  p. 352-357 | * How are the grids on journal page 115 the same as base-10 flats? Show 0.7 and 0.07 with base-10 blocks and a grid. How are the two decimals different? * How is the decimal point read in dollars and cents notation? |
| Optional | * **Lesson 5-8 Tenths and Hundredths** p. 358-362 | * Explain how you used the grid and base-10 blocks to represent 13 hundredths |
| 3.NF.1  4.NF.5  4.NF.6  4.MD.1  MP2,4,5,6 | * **Lesson 5-9 Tenths and Hundredths of a Meter** p. 363-367 | * How are representing decimals on a meterstick similar to representing decimals on a flat or hundred grid? How are they different? |
|  | * **Lesson 5-13 Progress Check 5**  p. 384-387 |  |

Support Resources

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| 3.NBT.1  VDW: v2, p. 47 | 3.NF.1 |

Unit 6: **Geometry** Time Frame: January 3 - 10 (6 days)

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| Essential Understanding:   * Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. * Reason with shapes and their attributes | | |
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| **CCSS focus this unit:**   * 3.MD.8-- Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.*.* * 3.G.1-- Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.   Also addressed: |  | **Math Practices**   1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. |
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|  | Planning/Reflective Questions for Teachers   * How can I help students understand “what” is measured influences “how” it is measured? * How can I help my students use geometric language to better describe shapes? |
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| **Key:**  **EM –** Everyday Mathematics Teacher’s Lesson Guide  **TRM—**Teacher’s Reference Manual  **AH—**Assessment Handbook (Everyday Mathematics)  **EM — DO** Everyday Math Part 3: Differentiation Options  **GK**—Everyday Math Games Kit (see “Teacher’s Guide to Games” book)  **VDW** – Teaching Student-Centered Mathematics by Dr. Van de Walle  **AIMS**-(name of book)—specific book will be identified with lesson name and page number(s)  **\*AFS –** Addition/Subtraction Fact Strategies  **\*MFS** – Multiplication Fact Strategies  **MW** – MeasureWorks |  | **Critical Vocabulary:**  line, line segment, ray, hexagon, intersect, parallel, rhombus, square, triangle, quadrilateral, rectangle, parallelogram, trapezoid, irregular polygon, plane figures, polygon, regular polygon |

Lessons not aligned to CCSS: 6-3, 6-4, 6-7, 6-8, 6-9, 6-10, 6-11, 6-12, 6-13

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| 4.G.1  MP2, 4, 5, 6, 7 | * **Lesson 6-1 Investigating Line Segments, Rays, and Lines**  p. 402-407 | * After completing the three activities ask: *How are a line segment, a line, and a ray alike and different?* * What does it mean to be accurate? |
| 4.G.1  MP2, 4, 5, 6, 7 | * **Lesson 6-2 Parallel & Intersecting Line Segments, Rays, and Lines**  p. 408-413 | * How might it help someone to learn what *parallel* and *intersect* mean if they find things that are parallel and intersecting in real life? |
| 3.MD.8,  3.G.1  MP2, 3, 6,  **▲3.1.K4**  **▲3.2.A1a** | * **Lesson 6-5 ~~Quadrangles~~ Quadrilaterals**  p. 426-431 | * How are your group’s quadrilaterals alike? How are they different? |
| 3.MD.8,  3.G.1  MP2, 5, 6  **▲3.1.K4** | * **Lesson 6-6 Polygons**  p. 432-437 | * What are other ways to represent polygons? * In what order did you add the lengths of the polygon? Why? |
| 3.G.1  MP2, 5, 6 | * **Additional lesson –** Polygon Family Tree | * What are all the geometry names for a square? |

Support Resources

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| 3.MD.8  **MW** “Polygon Perimeter” p. 3  **MW** “Polygon Parade” p. 4 | 3.G.1  **GK** “Touch-&-Match ~~Quadrangles~~”  **GK** “ “Name That Polygon  **VDW** v2 – “What’s My Shape” p. 213 |

Unit 7: **Multiplication and Division** Time Frame: January 11 - 30 (13 days)

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| Essential Understanding:   * Multiply and divide within 100**.** * Solve problems involving the four operations, and identify and explain patterns in arithmetic. * Represent and solve problems involving multiplication and division * Use place value understanding and properties of operations to perform multi-digit arithmetic**.** | | |
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| **CCSS focus this unit:**   * 3.OA.7-- Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. * 3.OA.1-- Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.* * 3.OA.3 - Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. * 3.OA.8 - Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. * 3.NBT.3 - Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations   Also addressed:   * 3.NBT.2-- Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. * 3.OA.2-- Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. * 3.OA.4 - Determine the unknown whole number in a multiplication or division equation relating three whole numbers. * 3.OA.5 - Apply properties of operations as strategies to multiply and divide. * 3.OA.6 - Understand division as an unknown-factor problem. * 3.OA.9 - Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. |  | **Math Practices**   1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. |
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|  | Planning/Reflective Questions for Teachers   * What can be done to help students understand how the operations affect numbers? * What can be done to help students utilize multiple problem solving strategies? |
|  |  |  |
| **Key:**  **EM –** Everyday Mathematics Teacher’s Lesson Guide  **TRM—**Teacher’s Reference Manual  **AH—**Assessment Handbook (Everyday Mathematics)  **EM — DO** Everyday Math Part 3: Differentiation Options  **GK**—Everyday Math Games Kit (see “Teacher’s Guide to Games” book)  **VDW** – Teaching Student-Centered Mathematics by Dr. Van de Walle  **AIMS**-(name of book)—specific book will be identified with lesson name and page number(s)  **\*AFS –** Addition/Subtraction Fact Strategies  **\*MFS** – Multiplication Fact Strategies |  | **Critical Vocabulary:**  product, square number, factor, commutative property of multiplication, order of operation, multiple, estimate, |

Lessons not aligned to CCSS: 7-9

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| 3.OA.1,3.OA.7,  3.OA.9  MP1, 2, 5, 6, 7, **▲3.1.1.K3b**  **▲3.2.1.A2** | * **Lesson 7-1 Patterns in Products**  p. 576-581 | * What patterns did you and your group find in the multiplication and division table? * Which pattern(s) helps you the most? Why? |
| 3.OA.4,3.OA.5,  3.OA.7,3.OA.9  MP2, 5, 6, 7  **▲3.1.4.K7** | * **Lesson 7-2 Multiplication Facts Survey** p. 582-587 | * How might it help you to shade in the multiplication facts you know? * What is one of the rules for odd and even factors and their products? How do you know that this rule is true? |
| 3.OA.1,3.OA.2,  3.OA.7  MP5, 6, 7, 8 | * **Lesson 7-3 Fact Power** p. 588-593 | * What tools could you use to help you with multiplication facts while playing *Multiplication Bingo*? |
| 3.OA.3,3.OA.4,  3.OA.7,3.OA.8,  3.NBT.2  MP1, 4, 6, 8 | * **Lesson 7-4 Number Models with Parentheses** p. 594-599   *Teacher Note: emphasis needs to be on computation within the lesson. De-emphasize parentheses—modeling ok, but not expected at this grade level* | * What other symbols in number sentences help you understand how to solve them? |
| 3.OA.7,3.OA.8  MP1,2,4,6,8 | * **Lesson 7-5 Scoring in Basketball: and Application**  p. 600-605 | * How did you figure out *different* ways to score 10 points in basketball? * Why might it be helpful to know? |
| 3.OA.6,3.OA.7,  3.NBT.3  MP4, 6, 7, | * **Lesson 7-6 Extended Facts: Multiplication and Division**  p. 606-611 | * What patterns do you see within each set of problems? |
| 3.OA.3,3.OA.8,  3.NBT.3  MP2,3,4,5,6,7  **▲3.1.4.A1b** | * **Lesson 7-7 Estimating Costs**  p. 612-617 | * If you make an estimate that is different from someone in your group, can you both be correct? Why or why not? |
| 3.OA.3,  3.NBT.3  MP2, 4, 6, 7 | * **Lesson 7-8 Extended Fact: Products of Tens**  p. 618-623 | * Why is it important to know what the numbers mean when writing number models and solving number stories? |
|  | * **Lesson 7-10 Progress Check 7** p. 630-633 |  |

Support Resources

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| 3.OA.7  **GK** “Multiplication Bingo”; Multiplication Baseball”; “Beat the Calculator”; “Multiplication Top-it”  **MFS**  “Salute” | 3.NBT.3  **VDW**  v2 p. 116 |
| 3.OA.3 | 3.OA.8 |
| 3.OA.1 |  |

Unit 9: **Multiplication and Division** Time Frame: Jan 31 – March 1 (20 days)

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| Essential Understandings:   * Represent and solve problems involving multiplication and division. * Understand properties of multiplication and the relationship between multiplication and division. * Geometric measurement: understand concepts of area and relate area to multiplication and to addition. * Use place value understanding and properties of operations to perform multi-digit arithmetic. | | |
|  | | |
| **CCSS focus this unit:**   * 3.OA.3-- Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities,. * 3.OA.5-- Apply properties of operations as strategies to multiply and divide. *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)* * 3.NBT.2-- Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. * 3.NBT.3 – Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. * 3.MD.5b – Recognize area as an attribute of plane figures and understand concepts of area measurement b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units * 3.MD.7a-d – Relate area to the operations of multiplication and addition.   a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.  b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.  c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths *a* and *b* + *c* is the sum of *a* × *b* and *a* × *c*. Use area models to represent the distributive property in mathematical reasoning.  d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.  Also addressed:   * 3.OA.1- Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.* * 3.OA.2 – Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. * 3.OA.7 – Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. * 3.OA.8 – Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. |  | **Math Practices**   1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. |
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|  | Planning/Reflective Questions for Teachers   * What can be done to help students make sense and persevere while solving one- and two-step problems? * What can be done to help students understand various approaches to solutions? |
| **Critical Vocabulary**  multiples, algorithm, estimation, factor, estimate, remainder, quotient, equilateral triangle, place value, array, diagram |
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| **Key** |  |  |

Lessons not aligned to CCSS: 9-5, 9-9, 9-13

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| 3.OA.3, 3.OA.6,  3.OA.1, 3.OA.8,  3.NBT.3  MP1-6 | * **Lesson 9-1 Multiply and Divide with Multiples of 10, 100, and 1,000** p. 712-717   *Teacher Note: standard goes to multiples of tens* | * How might you use what you know about place value to help you solve these problems? |
| 3.OA.1, 3.OA.3,  3.OA.5, 3.OA.8,  3.NBT.3,  MP 1-8  **▲3.1.1.K3b** | * **Lesson 9-2 Using Mental Math to Multiply**  p. 718-723 (2 days)   *Teacher Note: also do Readiness activity* | * Are some strategies better suited for certain problems than others? Why or why not? |
| 3.NBT.3, .MD.5b, 3.MD.7a,b,c,d 3.MD.8  MP 1-8 | * **Lesson 9-3 Exploring Arrays, Areas, and Fractions**  p. 724-729 (2 days)   *Teacher Note: also do Readiness activity—need to discuss perimeter/area connection.*  *Skip Exploration C* | * How do you know whether you used the *fewest* number of base-10 blocks to show 36? |
| 3.OA.3, 3.OA.5,  3.NBT.2, .MD.5b, 3.MD.7a,b,c,d  MP2,4,5,6,7  **▲3.1.1.K3b** | * **Lesson 9-4 A Multiplication Algorithm** p. 730-735 | * What are other ways to model multiplication? |
| 3.OA.2, 3.OA.3,  3.OA.5, 3.OA.7  MP1,2,4,5,6,7  **▲3.1.1.K3b** | * **Lesson 9-6 Factors of a Whole Number** p. 742-747 | * How do you know whether you named all of the factors of 24? * Can you choose numbers for your board that will give you a better chance of winning? |
| 3.OA.2, 3.OA.3,  3.OA.7,  MP1,2,4,5,6,7 | * **Lesson 9-7 Sharing Money** p. 748-753 | * How can sharing money help you to write division number models for equal-sharing number stories? |
| 3.OA.3, 3.OA.2  MP1,2,3,4,5,6 | * **Lesson 9-8 Broken-Calculator Division**  p. 754-758 | * Why do you have to understand what the decimals in your calculator display mean before you can tell the answer?. |
| Optional | * **Lesson 9-9 Lattice Multiplication**  p. 760-765 |  |
| 3.MD.5b, 3.MD.7a,b,c,d  MP1,2,4,5,6,7 | * **Lesson 9-10 Exploring Arrays, …, and Strength of Paper** p. 766-771 (2 days)   *Teacher Note: skip Explorations E & F* | * If you were building something, what shape might you use to hold lots of weight? |
| 3.OA.7, 3.OA.5,  3.NBT.2,3.NBT.3, 3.MD.5b, 3.MD.7a,b,c,d | * **Lesson 9-11 Products of 2-Digit Numbers, Part 1**  p. 772-777 | * How did you use partial products to solve the problems? |
| * **Lesson 9-12 Products of 2-Digit Numbers, Part 2**  p. 778-783 | * How do visual models help you solve problems? |
| 3.OA.1,  3.NBT.2,  MP2,4,5,6,7 | * **Algorithm Project 3 (multiplication)** p. A10-A14 | * Why is understanding place value important for using the traditional algorithm? |
|  | * **Lesson 9-14 Progress Check 9**  p. 790-793 |  |

Support Resources

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| 3.MD.7  **VDW**  v2 pl 116 - 117 | 3.OA.5  **GK**  “Factor Bingo”  **VDW**  v2 pl 117 - 119 |
| 3.NBT.3  **MFS -** “Tens Fact Strategy” p. 42  **VDW**  v2 pl 116- 118 | 3.NBT.2 |
| 3.MD5b | 3.OA.3 |

Unit 8: **Fractions** Time Frame: March 4 – April 30 (33 days w/assessment)

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| Essential Understandings:   * Develop understanding of fractions as numbers. * Reason with shapes and their attributes | | |
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| **CCSS focus this unit:**   * 3.NF.1-- Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*. * 3.NF.2a,b - Understand a fraction as a number on the number line; represent fractions on a number line diagram.   a. Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line.   * b. Represent a fraction *a*/*b* on a number line diagram by marking off *a* lengths 1/*b* from 0. Recognize that the resulting interval has size *a*/*b* and that its endpoint locates the number *a*/*b* on the number line. * 3.NF.3a-d - Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.   a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.  b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.  c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.*  d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.   * 3.G.2-- Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.*   Also addressed:   * 3.MD.4-- Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters |  | **Math Practices**   1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. |
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|  | Planning/Reflective Questions for Teachers   * How can I help my students gain a deep understanding of fractions using the 3 types of fraction models (regional, linear, set)? * How can I help my students develop a strong understanding of what the numerator and denominator of a fraction tells us? |
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| **Key:**  **EM –** Everyday Mathematics Teacher’s Lesson Guide  **TRM—**Teacher’s Reference Manual  **AH—**Assessment Handbook (Everyday Mathematics)  **EM — DO** Everyday Math Part 3: Differentiation Options  **GK**—Everyday Math Games Kit (see “Teacher’s Guide to Games” book)  **VDW** – Teaching Student-Centered Mathematics by Dr. Van de Walle  **AIMS**-(name of book)—specific book will be identified with lesson name and page number(s)  **\*AFS –** Addition/Subtraction Fact Strategies  **\*MFS** – Multiplication Fact Strategies |  | **Critical Vocabulary:**  equal, denominator, numerator, fraction, mixed number, equivalent, line segment, |

Lessons not aligned to CCSS: 8-2

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| 3.NF.1,  3.NF.3c,  3.G.2  MP2,3,4,5,6 | * **Lesson 8-1 Naming Parts with Fractions**  p. 648-653 (3 days)   *Teacher Note: also do Readiness, ELL activities* | * How might pictures help you understand fractions? * When could you use fractions of sets in real life? Explain your answer. |
| 3.G.2  MP1-7  **▲3.3.1.K4** | * **Lesson 8-3 Exploration: Exploring Fractions, Re-forming Squares, and Combinations**  p. 659-664   *Teacher Note: delay Exploration C until end of unit* | * What do you know from the problem and what do you need to find out? * What helps you get started when trying to solve a new problem? |
| 3.NF.1,  3.NF.2a,b  3.NF.3a,b,c,d 3.G.2  MP 1-8 | * **Lesson 8-4 Number-Line Posters for Fractions**  p. 665-670 (2 days)   *Teacher Note: also do Readiness & Enrichment activities* | * Why might it be helpful to think about how math tools, such as number lines, rulers, and the Fraction Number-Line Poster, are alike and different? |
| 3.NF.1,  3.NF.2a,b  3.NF.3a,b,c,d 3.G.2  MP 1-6 | * **Lesson 8-5 Equivalent Fractions**  p. 671-676 (2 days)   *Teacher Note: also do Readiness (pre-lesson) and Homelink as a class activity* | * How could you use these patterns to figure out other equivalent fractions? * How could patterns help you find equivalent names for numbers? |
| 3.NF.3b  MP1-6,8 | * **Additional lesson: fraction (slicing squares)** | * How could patterns help you find equivalent names for numbers |
| 3.NF.1  3.NF.2  3.NF.3a  MP 1-6 | * **Additional lesson: fraction (number line)** | * What are the challenges of writing fractions on a number line? |
| 3.NF.3d  MP 1-6 | * **Additional lesson: fraction (anchors 0, ½, 1)** | * How does knowing close a fraction is to 0, ½, or 1 help understand its value? |
| 3.NF.3a,b,d  MP2, 5,6, 7 | * **Lesson 8-6 Comparing Fractions**  p. 677-681 | * How would you explain to someone what a unit fraction is? * What does it mean for fractions to be in order? |
| 3.NF.1,  3.NF.2b, 3.NF.3a,b,c 3.G.2  MP2,3,4,5,7 | * **Lesson 8-7 Fractions Greater Than ONE**  p. 682-687 (2 days)   *Teacher Note: also include enrichment activity as a whole class* | * What does *equivalent* mean * How can mathematical vocabulary help you describe numbers? |
| 3.NF.2a,b  3.NF.3a,c,d  3.MD.4  MP2,3,4,5,6 | * **Lesson 8-8 Fractions in Number Stories**  p. 688-693 (2 days)   *Teacher Note: also do “Open Response” AH p. 186* | * Why did you choose the tool(s) you used to help you solve the fraction number stories? |
|  | * **Lesson 8-9 Progress Check 8**  p. 694-697   *Teacher Note: skip #6, 7, 10* |  |
| **▲3.4.1.K2** | * **Additional Lesson: Probability** (possible outcomes) lesson and Exploration C from lesson 8-3 | * If more data is collected, would you change your predictions? Why or why not? * How might data help you make predictions? |

Support Resources

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| 3.NF.1  **AIMS** (Solve It!) “In so Many Words” p. 23-32  **VDW -** v1 “p. 251-272 | 3.NF.2  **VDW -** v1 “p. 251-272 |
| 3.NF.3  **AIMS** (Solve It!) “What is the One?” p. 53-58  **GK** “Equivalent Fractions” “Equivalent Fractions (adv); “Fraction Top-it” | 3.G.2  **AIMS –** Solve-It! “Blocking Out Fractions” p. 195-203 |

Notes:

Unit 10: **Measurement and Data** Time Frame: May 1 -22 (16 days)

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| Essential Understandings:   * Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. * Represent and interpret data. | | |
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| **CCSS focus this unit:**   * 3.MD.2- Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.. * 3.MD.3-- Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*   Also addressed:   * 3.OA.8-- Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. |  | **Math Practices**   1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. |
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|  | Planning/Reflective Questions for Teachers   * How can I help my students understand how to interpret data in different displays? * How can I provide an opportunity for my students to explore measurement and measurement tools? |
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Lessons not aligned to CCSS: 10-2, 10-6, 10-7, 10-8, 10-10

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| 3.MD.2  MP2, 5, 6 | * **Lesson 10-3 Weight** p. 826-824   *Teacher Note: prioritize reading and ordering activities. Readiness beneficial to include.* | * What parts of the discussion about the meaning of weight and units of weight could help you better understand what weight means? |
| 3.MD.2  MP2,3,4,5,6 | * **Lesson 10-4 Exploration: Exploring Weight and Volume** p. 825-829 | * How can you get more accurate at estimating weight? |
| 3.MD.2  MP2,3,4,6 | * **Lesson 10-5 Capacity**  p. 830-834   *Teacher Note: add measuring experiences to practice and give practical application to this lesson* | * When might you need to know how many cups are in a pint (or other measurement equivalences)? |
| 3.OA.8,  3.MD.3  MP2,4,5,6 | * **Lesson 10-9 Frequency Distributions** p. 852-857   *Teacher Note: de-emphasize median, mode elements and add questions like “how many more/less” see 3.MD.3* | * Which is more efficient –finding the median from the unordered data on the Class Data Pad or from the frequency table? Why? |
|  | * **Lesson 10-11 Progress Check 10**  p. 862-865   *Teacher Note: skip #9 - 13* |  |

Support Resources

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| 3.MD.2  **VDW -** v1 “Measuring Volume and Capacity” p. 238-241  **VDW –** v2 p. 265-268 | 3.MD.3  **VDW –** v2 p. 329-332, 337-338  **VDW -** v1 p. 317-321 |

Optional End-of-Year Projects

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| **CCSS** | **Lesson** | **Questions to encourage MP** |
| MP2, 4, 6 3.MD.3  3.MD.4 | * **Project 2 “Watermelon Feast & Seed Spitting Contest”** p. 483-485 |  |
| MP 1,2,8 | * **Project 5 “Attributes”** p. 494-497 |  |
| MP1,4, 5,6  3.OA.8 | * **Project 6 “how Far Can You Go in a Million?”** p. 498-501 |  |
|  | * **AIMS Solve-it Activities** |  |